MACOMBER

STEEL ROOF TRUSSES

U. S. PATENT NO. 1678738 AND PATENTS PENDING

SAFE LOADING TABLES

AND

STANDARD SPECIFICATIONS

One of the Massillon Line
of
Standard Steel Building Products

THE MACOMBER STEEL COMPANY
10TH AND BELDEN, N. E. CANTON, OHIO

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GENERAL

STEEL roof trusses are used largely for supporting roof construction where a clear open floor space free from interior columns or walls is desired. This construction is vital to gymnasiums, auditoriums, theatres and airplane hangars. It is an essential feature in building garages and certain types of industrial buildings.

Steel is particularly fitted for building roof trusses. It is the strongest material for its weight known to the building industry. The processes in its manufacture make for consistent safety and security.

Two forms of roof trusses have proven of value to the building industry—the curved chord or "bow string" and the "A" type truss. The former type is a most economical form of truss in theory and practice. It results in a lower building height with a minimum of material used in the end walls of the building, a minimum of dead air space to heat in winter and a minimum of roofing material. In addition the curved chord truss is adaptable for all types of roofing except overlapping decking dependent upon the pitch of the roof such as slate and tile. The "A" type truss is suitable with all types of decking.

Roof trusses can be and have been used for all spans within the range of building requirements. They are particularly economical for spans up to 120 ft. Spans under 36 feet are usually framed to advantage with steel beams.

MACOMBER ROOF TRUSSES

Through the Macomber system of standardization standard trusses are manufactured for all spans from 36 feet to 120 feet. Each truss is designed for a specific maximum span. The end construction is reinforced and designed for any span down to its minimum. In this manner standard stock size trusses are available for the complete range of economical roof spans.

As an example of Macomber standardization, the 38-CL-truss is designed for a total load of 35,000 pounds for a 38 foot span. This truss will carry a total load of 37,000 pounds when used for its minimum span—36 feet. The total safe load for intermediate spans may be obtained by interpolation. In the same manner the 40-CL truss takes care of spans from 40 feet down to 38 feet. The CH series of trusses duplicates the CL series for heavier roof loads.

The trusses are designed in accordance with the American Institute of Steel Construction specifications. Safe loading tables and overall dimensions are printed on the following pages. As the Institute specifications have been adopted almost universally for structural steel designing the tables serve for all except a few cities. Safe loads based on specifications other than Institute specifications will be furnished where required.

TRUSS DETAILS

All trusses are designed with conventional double angle top and bottom chords. Angles and plates serve for the web and end construction. Standard structural grade steel, rolled from new billets, is used throughout. No metal less than ¼ inch in thickness is used.

All shop connections are fabricated with modern electric arc welding. Solid beads of metal are added at the connections that provide a factor of safety of five. Rigid inspection insures connections that are stronger than the members they unite.

The shorter trusses are shipped in one piece. The longer trusses are shipped in two or three sections for convenience in handling and erecting in the field. The truss splices are designed for bolting with holes reamed to 1/64″ clearance and fitted with turned bolts. The trusses are assembled and match marked in fabricating to insure speed and accuracy in assembling on the job.

The trusses are anchored to masonry pilasters with standard wall anchors. The trusses rest on steel bearing plates which may be bought locally and bricked into the pilaster or these plates may be purchased welded to the truss. The truss bottom chords are punched for bolting or riveting to steel columns where supported on steel. A standard extra charge is made for punching truss top chords for attaching steel purlin construction other than Macomber Bar Joists and Nailer Joists which are attached with special connection bolts that do not require top chord punching.

TRUSS BRACING

Bracing is recommended for all trusses to assist in lining them up and holding them in place during the erection period. This is all that is required of the bracing in buildings with shorter spans as the roof construction effectively braces the trusses after the building is completed. Buildings with longer truss spans should be provided with bracing that will transmit and transfer wind stresses. Three types of standard bracing have been designed to take care of practically all normal requirements. Two of these—the "X" and "Z" types—are illustrated on page 3. Special bracing is designed where standard bracing does not fit the requirements of the building. This particularly applies to buildings where line shafting or machinery is suspended from the trusses.

ROOF TRUSS DESIGNING

The standardized form of Macomber Roof Trusses permits an architect or engineer to lay out and design a building with these steel trusses as easily and accurately as with simple beams. Any Macomber representative can prepare definite recommendations and quote on the necessary material except where heavier concentrated loads are to be supported from the trusses. Only a slight delay is occasioned where such special conditions must be referred to our Engineering Department.

ADVANTAGES

The standardized features of Macomber Trusses speed up every step from the preliminary layouts to the final completion of projects involving roof trusses. Prompt estimates and quotations are secured. Detailed checking of the various truss members is eliminated as all trusses are fabricated to standard shop drawings and based on the same standard approved designs. Ample stocks are maintained that permit fabrication immediately upon receipt of necessary punching details. Prompt shipment is normally made after receipt of these approved details.

Standardized shop practice and engineering designs result in savings that make Macomber Roof Truss construction decidedly economical where the advantages of steel and sound engineering practice are desired.

MACOMBER ROOF TRUSSES

Details Shown Apply to "CL" and "CH" Series

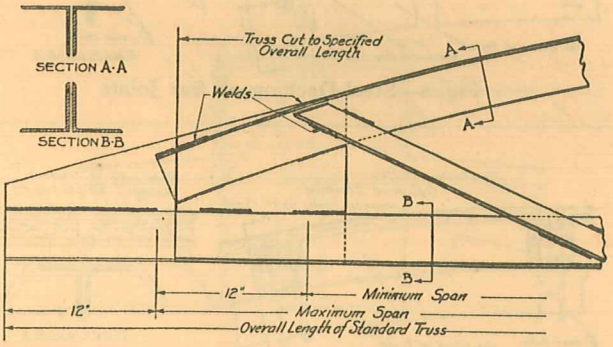


Fig. 1—Detail of Truss End

Standard trusses are shipped with overall length noted in safe loading tables unless otherwise specified. The light lines indicate truss end cut off to fit the requirements of a building. This does not affect the safe loads for trusses listed in the loading tables.

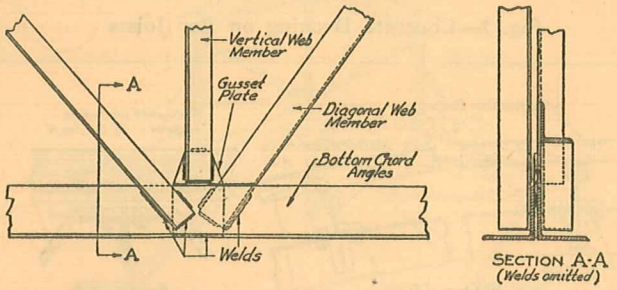


Fig. 2—Detail of Typical Welded Connection

All shop connections are fabricated with modern structural arc welding. The welds are designed with a factor of safety of five and all welds are individually inspected before painting. Filler plates are welded between top and bottom chord angles at mid-panel points.

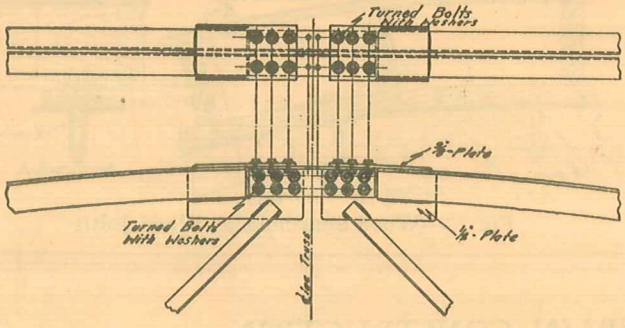


Fig. 3—Detail of Typical Bolted Splice

Trusses for spans over 44 ft. are shipped in sections for convenience in handling and erecting. A typical splice fitted with turned bolts is shown above. Holes are reamed to 1/64" clearance and trusses assembled and match marked before knocking down for shipment. Accuracy of fabrication and speed in assembly on the job are essential features of Macomber trusses.

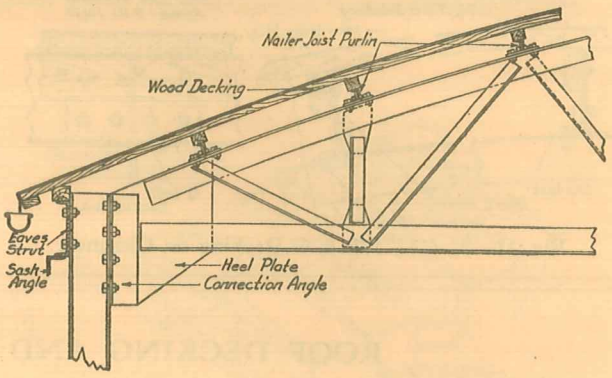


Fig. 4—Truss End Framed to Steel Column

Where trusses are framed into columns. the trusses are cut to the clear span between columns. Special heel plates and connection angles are provided for bolting to columns. Trusses may be used for any clear span between the maximums and minimums listed in the loading tables. There is usually no delay in shipment for trusses framed to columns.

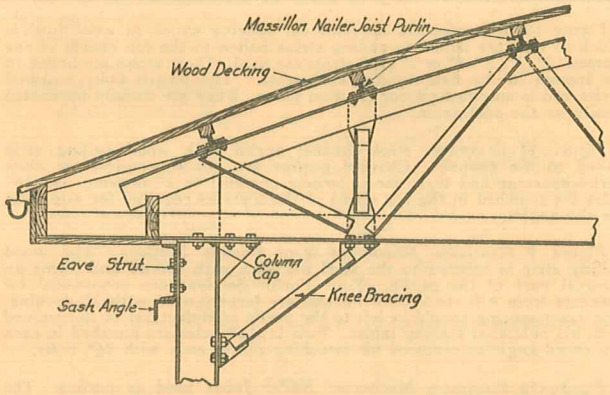


Fig. 5—Truss End Bearing on Steel Columns

Trusses normally rest on steel columns with bottom chords punched as required and bolted to column cap. Where knee bracing is required to stiffen the columns, the bottom chord is punched as required for attaching the bracing. Knee bracing, eave struts, sash angles and columns are regularly furnished as a part of Macomber service. See Macomber Catalog No. 618.

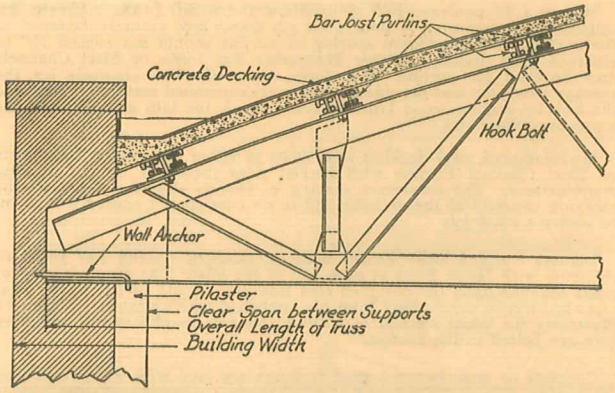


Fig. 6—Truss End Bearing on Masonry

Where trusses bear on masonry, wall anchors are provided. The ends of the truss usually do not project into the face brick. Where this occurs the trusses should be cut to allow 5 inches for face brick at each end. Steel bearing plates are required under trusses and when ordered from us are welded to the truss

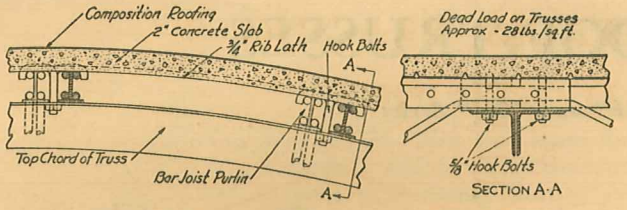


Fig. 7—Concrete Decking on Bar Joists

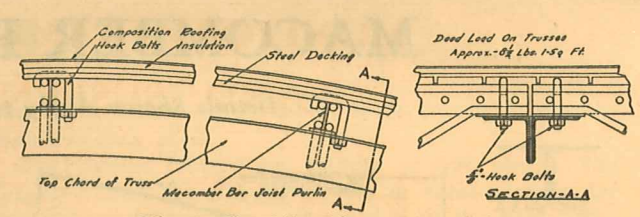


Fig. 8—Steel Decking on Bar Joists

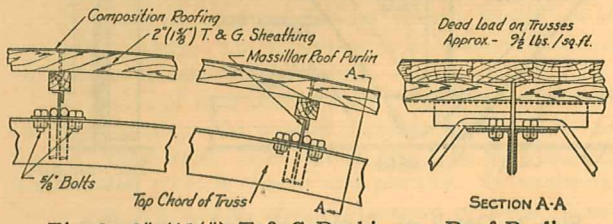


Fig. 9—2" (1⅝") T & G Decking on Roof Purlins

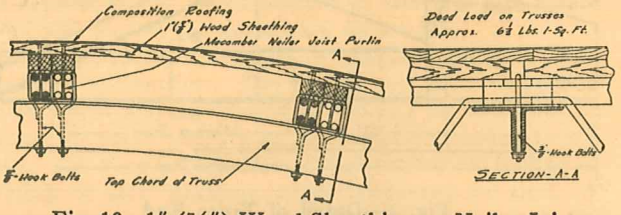


Fig. 10—1" (⅞") Wood Sheathing on Nailer Joists

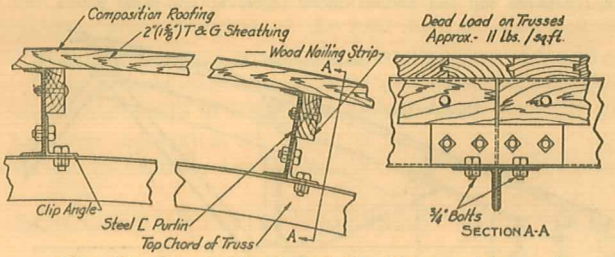


Fig. 11—2" (1⅝") T & G Decking on Channels

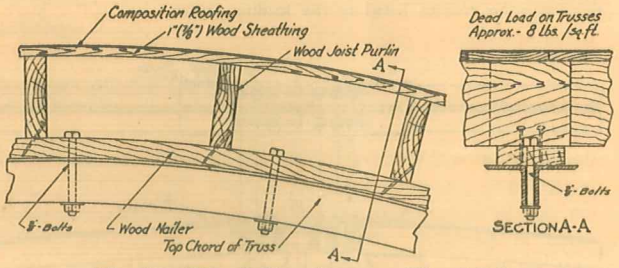


Fig. 12—Wood Sheathing on Wood Joists

ROOF DECKING AND PURLIN CONSTRUCTION ON MACOMBER ROOF TRUSSES

The type of roof decking selected determines the type of purlins best suited for carrying the decking and in turn determines the punching required in the top chords of the trusses for attaching the purlins. Sections are shown alongside of and through the top chord of the truss to illustrate different methods of attaching standard purlins.

CONCRETE OR STEEL DECKING

Where a 2" concrete slab is used for the decking, the concrete (or satisfactory substitute) is poured on rib metal lath securely fastened to the purlins. The maximum spacing of purlins should not exceed 30" to secure a good decking. Either Macomber Bar Joists or Steel Channels may be used for purlins. Bar Joists cost less than channels for the average condition and provide a rapid and economical method of securing the lath by driving wood lath wedges through the lath and between the top bars of the joists.

Manufactured steel decking is secured to either Macomber Bar Joists or Steel Channel Purlins with special clips furnished by the decking manufacturer. The maximum spacing of purlins should not exceed the carrying capacity of the decking and in no case should exceed 5 ft. 0 in. to secure a good job.

Figures 7 and 8 illustrate the usual methods of bolting Bar Joists to the truss with Hook Bolts at each end of the joist. The exact spacing of joists depends upon the designed roof load and should be left to the joist manufacturer or determined from his published loading tables. Figure 11 illustrates the usual method of bolting channels to clip angles which in turn are bolted to the trusses.

Concrete or manufactured steel deckings are used with good results on Macomber "CL," "CH" and "A" Trusses. Corrugated iron sheets provide the least expensive of incombustible deckings and are carried on the same types of purlins. Steel straps are passed under the top bars of bar joists or around the channels and riveted to the sheets. Care must be used in lapping and riveting corrugated sheets to avoid leakage when used on curved roofs.

WOOD DECKING

1" (⅞") plain sheathing, 2" (1⅝") plain sheathing and 2" (1⅝") tongue and groove are common forms of wood deckings. All are nailed to the supporting purlins. The maximum spacing of purlins should not exceed the strength of decking used. The maximum spacing for good 2" stock should not exceed 7 ft. 6 in. The maximum spacing for good 1" stock should not exceed 4 ft. 0 in. The sheathing should be ordered in lengths to span three or more purlin spacings and splices should be broken. Plain sheathing should be spliced over the purlins. Matched tongue and groove stock does not require splicing over purlins. Where 2" stock is used on curved roofs the purlins should not be spaced over 6 ft. apart at the maximum to insure a satisfactory roof.

Figure 12 illustrates the conventional decking nailed to wood purlins which in turn are nailed to nailing strips bolted to the top chords of the trusses. 2"x6", 2"x8" or 2"x10" strips are used. These strips are bolted to the trusses in the field by the contractor. The length bolts required varies and is specified on our erection plans. They are usually purchased locally by the contractor.

Figure 11 illustrates steel channel purlin with wood nailing strip bolted to the channel. Channel purlins are not economical for close purlin spacings and their use is largely confined to 2" decking. 13/16" holes are punched in the top chord of the truss as required for attaching the clip angles.

Figure 9 illustrates Macomber Roof Purlins Sections. The wood nailing strip is secured to the steel top bars with screws and forms an integral part of the purlin. Roof Purlin Sections are economical for spacings from 4 ft. to 7 ft. 6 in. and are largely used with 2" decking. The exact spacing should be left to the purlin manufacturer or determined from his published loading tables. Two 11/16" holes are punched in each top chord angle as required for attaching purlin ends with ⅝" bolts.

Figure 10 illustrates Macomber Nailer Joists used as purlins. The nailing strip feature is identical with that of the Roof Purlin Sections. The joists are economical for purlin spacings of from 18" to 48" and are used largely with 1" decking. The exact spacing of joists should be left to the joist manufacturer or determined from his published loading tables. The joists are attached to the truss top chord with special bolts as illustrated.

Note: See Macomber Steel Company catalog No. 610 for Macomber Bar Joist loading tables; No. 611 for Macomber Nailer Joist and Roof Purlin Section loading tables; No. 619 for Macomber Steel Roof Decking: No. 618 for Complete Service in Steel for One Story Buildings.

MONITOR FRAMES TRUSS BRACING AND SUSPENDED CEILINGS

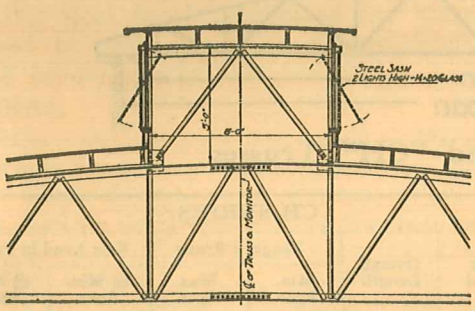


Fig. 13—Monitor Frame for CL and CH Trusses

Monitor Frames are available in above standard stock size for bolting to "CL" and "CH" trusses. Trusses and frames are assembled and match marked to insure accuracy in fabrication and speed in assembly in the field.

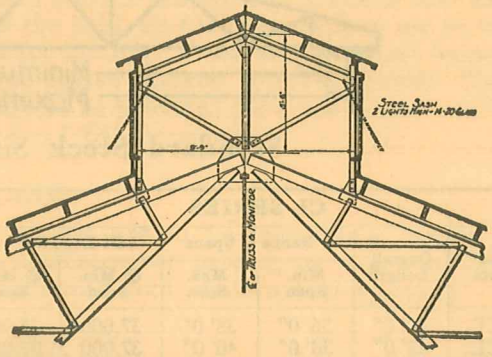


Fig. 14—Monitor Frame for A Type Trusses

Standard stock size Monitor Frames are also available for "A" trusses. These frames as well as the "CL" and "CH" frames take standard stock size steel windows, 2 lights high, 14"x20" glass size. Special monitor frames are provided to meet special requirements.

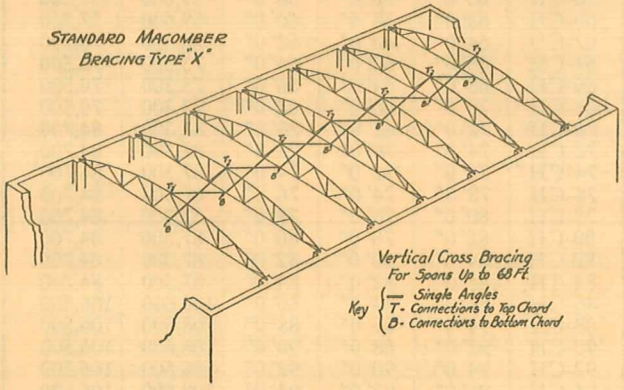


Fig. 15—Vertical Cross Bracing

Bracing is recommended to assist in lining up and erecting all trusses. The roof construction effectively braces the trusses for shorter spans after the building is completed. The above is a simple and economical vertical cross bracing recommended for spans up to 68 ft. where trusses bear on masonry.

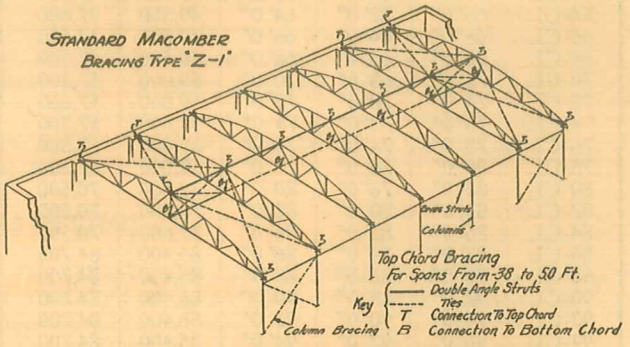


Fig. 16—Stiff Bracing for Spans up to 50 ft.

Stiff bracing is required where trusses are supported on steel columns. The above bracing is recommended for spans up to 50 ft. where trusses are framed to steel columns. In addition the columns should be braced with eave struts and cross bracing as indicated.

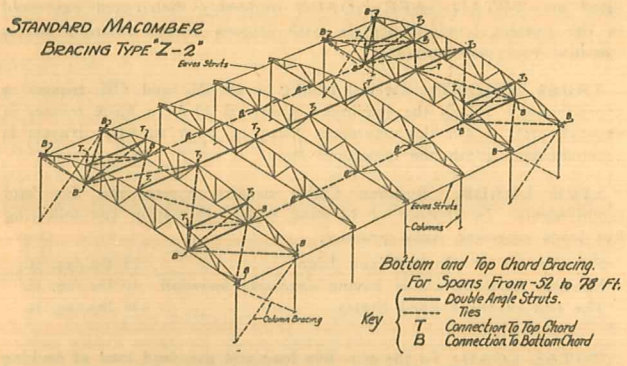


Fig. 17—Stiff Bracing for Spans over 52 ft.

Truss spans over 52 ft. require additional bracing members in end and intermediate bays. The above bracing is recommended for spans from 52 to 78 ft. Macomber Standard Type "H" bracing (not shown) takes care of all other normal conditions for spans over 78 ft.

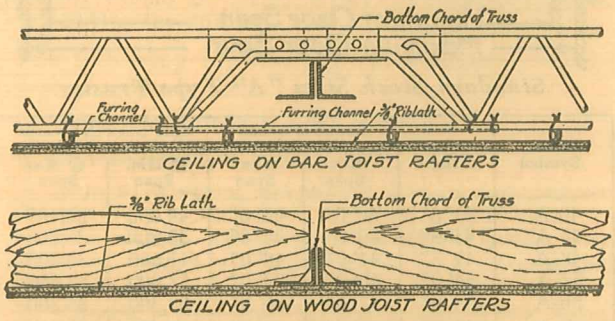


Fig. 18—Suspended Ceilings

Ceiling construction may be supported from the bottom chords of the trusses as shown above or by using a conventional suspended ceiling with the hanger wires fastened to the purlin construction. No special fabrication is required on the trusses but allowance must be made for the dead weight of the ceiling—10 lbs./sq. ft.

SAFE LOADING TABLES AND OVERALL DIMENSIONS

MACOMBER ROOF TRUSSES

Standard Stock Size "CL" and "CH" Trusses

CL SERIES

Truss Symbol	Overall Length	Range of Spans		Safe Load in Pounds	
		Min. Span	Max. Span	@ Min. Span	@ Max. Span
38-CL	40′ 0″	36′ 0″	38′ 0″	37,000	35,000
40-CL	42′ 0″	38′ 0″	40′ 0″	37,000	35,000
42-CL	44′ 0″	40′ 0″	42′ 0″	37,000	35,000
44-CL	46′ 0″	42′ 0″	44′ 0″	43,300	41,500
46-CL	48′ 0″	44′ 0″	46′ 0″	43,300	41,500
48-CL	50′ 0″	46′ 0″	48′ 0″	43,300	41,500
50-CL	52′ 0″	48′ 0″	50′ 0″	43,300	41,500
52-CL	54′ 0″	50′ 0″	52′ 0″	43,300	41,500
54-CL	56′ 0″	52′ 0″	54′ 0″	49,500	47,600
56-CL	58′ 0″	54′ 0″	56′ 0″	49,500	47,600
58-CL	60′ 0″	56′ 0″	58′ 0″	49,500	47,600
60-CL	62′ 0″	58′ 0″	60′ 0″	49,500	47,600
62-CL	64′ 0″	60′ 0″	62′ 0″	49,500	47,600
64-CL	66′ 0″	62′ 0″	64′ 0″	49,500	47,600
66-CL	68′ 0″	64′ 0″	66′ 0″	49,500	47,600
68-CL	70′ 0″	66′ 0″	68′ 0″	49,500	47,600
70-CL	72′ 0″	68′ 0″	70′ 0″	59,000	57,300
72-CL	74′ 0″	70′ 0″	72′ 0″	59,000	57,300
74-CL	76′ 0″	72′ 0″	74′ 0″	59,000	57,300
76-CL	78′ 0″	74′ 0″	76′ 0″	59,000	57,300
78-CL	80′ 0″	76′ 0″	78′ 0″	59,000	57,300
80-CL	82′ 0″	78′ 0″	80′ 0″	72,600	70,500
82-CL	84′ 0″	80′ 0″	82′ 0″	72,600	70,500
84-CL	86′ 0″	82′ 0″	84′ 0″	72,600	70,500
86-CL	88′ 0″	84′ 0″	86′ 0″	86,400	84,700
88-CL	90′ 0″	86′ 0″	88′ 0″	86,400	84,700
90-CL	92′ 0″	88′ 0″	90′ 0″	86,400	84,700
92-CL	94′ 0″	90′ 0″	92′ 0″	86,400	84,700
94-CL	96′ 0″	92′ 0″	94′ 0″	86,400	84,700
96-CL	98′ 0″	94′ 0″	96′ 0″	86,400	84,700
98-CL	100′ 0″	96′ 0″	98′ 0″	86,400	84,700
100-CL	102′ 0″	98′ 0″	100′ 0″	86,400	84,700
120-CL	122′ 0″	118′ 0″	120′ 0″	108,600	106,500

CH SERIES

Truss Symbol	Overall Length	Range of Spans		Safe Load in Pounds	
		Min. Span	Max. Span	@ Min. Span	@ Max. Span
38-CH	40′ 0″	36′ 0″	38′ 0″	42,200	41,500
40-CH	42′ 0″	38′ 0″	40′ 0″	42,200	41,500
42-CH	44′ 0″	40′ 0″	42′ 0″	42,200	41,500
44-CH	46′ 0″	42′ 0″	44′ 0″	49,500	47,600
46-CH	48′ 0″	44′ 0″	46′ 0″	49,500	47,600
48-CH	50′ 0″	46′ 0″	48′ 0″	49,500	47,600
50-CH	52′ 0″	48′ 0″	50′ 0″	49,500	47,600
52-CH	54′ 0″	50′ 0″	52′ 0″	59,600	57,300
54-CH	56′ 0″	52′ 0″	54′ 0″	59,600	57,300
56-CH	58′ 0″	54′ 0″	56′ 0″	59,600	57,300
58-CH	60′ 0″	56′ 0″	58′ 0″	59,600	57,300
60-CH	62′ 0″	58′ 0″	60′ 0″	59,600	57,300
62-CH	64′ 0″	60′ 0″	62′ 0″	73,300	70,500
64-CH	66′ 0″	62′ 0″	64′ 0″	73,300	70,500
66-CH	68′ 0″	64′ 0″	66′ 0″	73,300	70,500
68-CH	70′ 0″	66′ 0″	68′ 0″	73,300	70,500
70-CH	72′ 0″	68′ 0″	70′ 0″	87,300	84,700
72-CH	74′ 0″	70′ 0″	72′ 0″	87,300	84,700
74-CH	76′ 0″	72′ 0″	74′ 0″	87,300	84,700
76-CH	78′ 0″	74′ 0″	76′ 0″	87,300	84,700
78-CH	80′ 0″	76′ 0″	78′ 0″	87,300	84,700
80-CH	82′ 0″	78′ 0″	80′ 0″	87,300	84,700
82-CH	84′ 0″	80′ 0″	82′ 0″	87,300	84,700
84-CH	86′ 0″	82′ 0″	84′ 0″	87,300	84,700
86-CH	88′ 0″	84′ 0″	86′ 0″	108,600	106,500
88-CH	90′ 0″	86′ 0″	88′ 0″	108,600	106,500
90-CH	92′ 0″	88′ 0″	90′ 0″	108,600	106,500
92-CH	94′ 0″	90′ 0″	92′ 0″	108,600	106,500
94-CH	96′ 0″	92′ 0″	94′ 0″	108,600	106,500
96-CH	98′ 0″	94′ 0″	96′ 0″	108,600	106,500
98-CH	100′ 0″	96′ 0″	98′ 0″	108,600	106,500
100-CH	102′ 0″	98′ 0″	100′ 0″	108,600	106,500
120-CH	122′ 0″	118′ 0″	120′ 0″	142,000	140,000

Standard Stock Sizes "A" Type Trusses

Truss Symbol	Overall Length	Range of Spans		Safe Load in Pounds	
		Min. Span	Max. Span	@ Min. Span	@ Max. Span
40-A	41′ 8″	36′ 0″	40′ 0″	44,000	36,400
44-A	45′ 8″	40′ 0″	44′ 0″	38,800	35,600
48-A	49′ 8″	44′ 0″	48′ 0″	41,600	36,000
52-A	54′ 0″	48′ 0″	52′ 0″	57,000	52,600
56-A	58′ 0″	52′ 0″	56′ 0″	59,300	56,500
60-A	62′ 0″	56′ 0″	60′ 0″	63,400	59,400
64-A	66′ 0″	60′ 0″	64′ 0″	69,300	65,700
68-A	70′ 0″	64′ 0″	68′ 0″	71,000	68,200
72-A	74′ 0″	68′ 0″	72′ 0″	77,700	72,500
76-A	78′ 0″	72′ 0″	76′ 0″	98,500	93,500
80-A	83′ 0″	76′ 0″	80′ 0″	126,000	122,000
84-A	87′ 0″	80′ 0″	84′ 0″	122,000	116,000

SAFE LOADS: Trusses are designed in accordance with the American Institute of Steel Construction Specifications. All loads listed are TOTAL SAFE LOADS uniformly distributed expressed to the nearest hundred pounds with trusses braced laterally as in standard roof construction.

TRUSS HEIGHT: Overall height of all CL and CH trusses is approximately 1/10th the maximum span; of 40-A to 60-A trusses is approximately 1/4th the maximum span; of 64-A to 84-A trusses is approximately 1/5th the maximum span.

LIVE LOADS: Building Codes usually govern the live load requirements. In absence of building code information the following live loads represent usual practice.

States south of Mason-Dixon Line	25 lbs./sq. ft.
Extreme northern states having excessive snowfall	40 lbs./sq. ft.
The rest of the United States	30 lbs./sq. ft.

TOTAL LOAD: To the roof live load add the dead load of decking and purlins (see page four). Where metal lath and plaster ceiling is to be carried by the trusses add 10 lb./sq. ft. All quotations and estimates furnished by Macomber Representatives are based on and include the dead weight of trusses and bracing required. This ranges from 2 to 7 lbs./sq. ft. depending on the span and spacing of trusses and can be taken at 4 lbs./sq. ft. for average conditions. Concentrated loads such as suspended balconies or monorail systems should be clearly specified in asking for quotations.

STANDARD SPECIFICATIONS

THE following specifications are for the purpose of aiding architects and engineers in specifying steel Roof Trusses of the Macomber type and to assist Building Commissioners in drafting building code sections.

GENERAL

All trusses shown in the plans shall be Macomber Steel Roof Trusses as manufactured by the Macomber Steel Company of Canton, Ohio. The trusses shall be designed to carry the dead weight of the roof construction as shown on the plans and a live roof load of _____ pounds per square foot. (Where required) In addition the trusses are to carry concentrated loads as shown on the plans and specified as follows:_____

Full facilities are to be provided by the manufacturer at all times for the proper inspection, chemical or physical, of the materials used and the workmanship employed in the manufacture.

DESIGN

The trusses are to be designed in accordance with the specifications of the American Institute of Steel Construction. Structural steel to conform to the standard specifications of the American Society of Testing Materials for Structural Steel for Buildings shall be used for all truss members. No metal less than ¼" in thickness is to be used.

SHOP CONNECTIONS

All shop connections shall be fabricated with electric arc welding and shall be designed for a factor of safety of five. Each weld shall be individually inspected and tested in accordance with the manufacturer's standard practice.

FIELD CONNECTIONS

Where trusses are built in sections and assembled in the field, all field connections are to be designed for bolting. Truss sections shall be assembled and match marked before shipment. Turned bolts are to be provided for truss splices and holes reamed to 1/64" clearance.

BRACING

All trusses are to be adequately braced with standard Macomber bracing as recommended for the spans and roof construction specified.

BEARING

(Steel Columns) Trusses shall be connected to steel columns as shown in the plans. The truss ends shall be punched as specified for column connections. Connection bolts shall not be considered as part of the truss contract but shall be furnished with the columns.

(Masonry) Trusses shall rest on and be bricked into masonry pilasters as shown in the plans. Standard Macomber wall anchors shall be provided for anchoring trusses to the masonry. The trusses shall rest on steel bearing plates either loose or welded to the trusses. The bearing pressure under the plates shall not exceed_____pounds per sq. in.

PAINTING

All trusses and bracing shall be given one coat of standard shop paint at the factory before shipment.

DETAILS REQUIRED IN ORDERING

It is recommended that quotations be asked for and orders placed for trusses and truss bracing on a lump sum basis freight allowed to nearest railway siding. Full plans for the project should be submitted to the Macomber representative or our home office at Canton in asking for quotation. It is frequently to the purchaser's advantage to combine and place orders for purlins, steel windows, columns, etc., with the truss order. This centers the responsibility for the steel requirements and results in savings in handling the combined order.

The following information is necessary to quote intelligently on trusses and bracing:

1. **TOTAL LOAD:** This includes the roof live load, the dead load of roof construction, the dead load of ceiling construction and the amount and location of concentrated loads. Each should be clearly specified. Our engineers are available to make definite recommendations as to live and dead loads where our experience can be utilized to advantage.

2. **SPAN:** The clear span between supporting columns or pilasters is required.

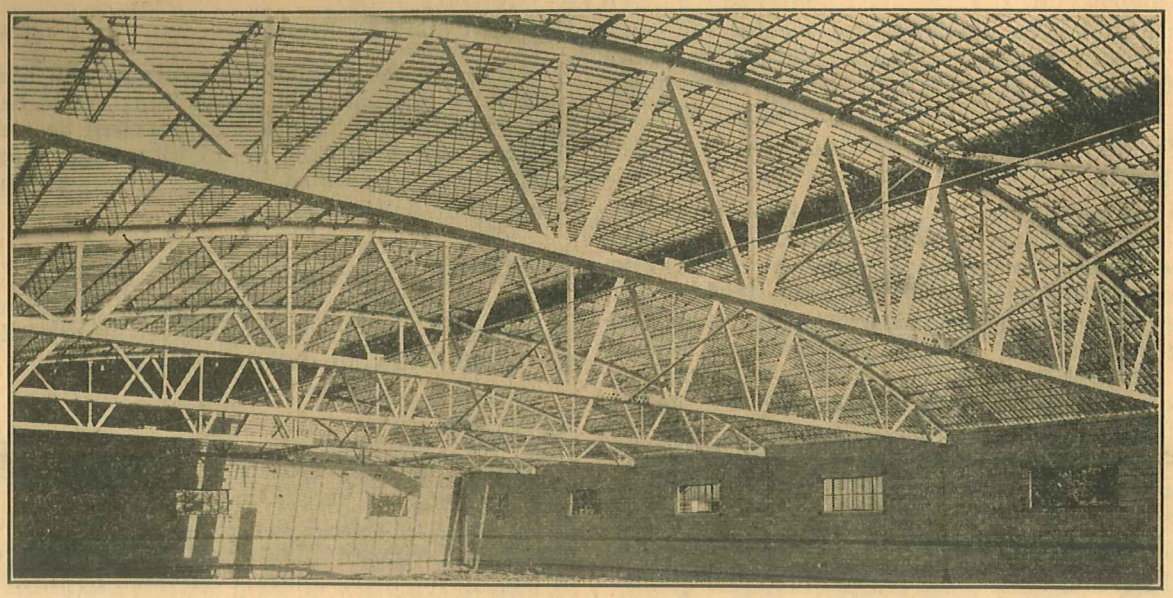
3. **LIMITATION IN SPACING OF TRUSSES:** Where possible the center to center spacing of trusses should be left to the Macomber representative or engineer to utilize the full carrying capacity of the trusses best suited for the requirement. The exact spacing of trusses should be stated where the building design determines the spacing.

The following information is essential to enter and ship truss orders:

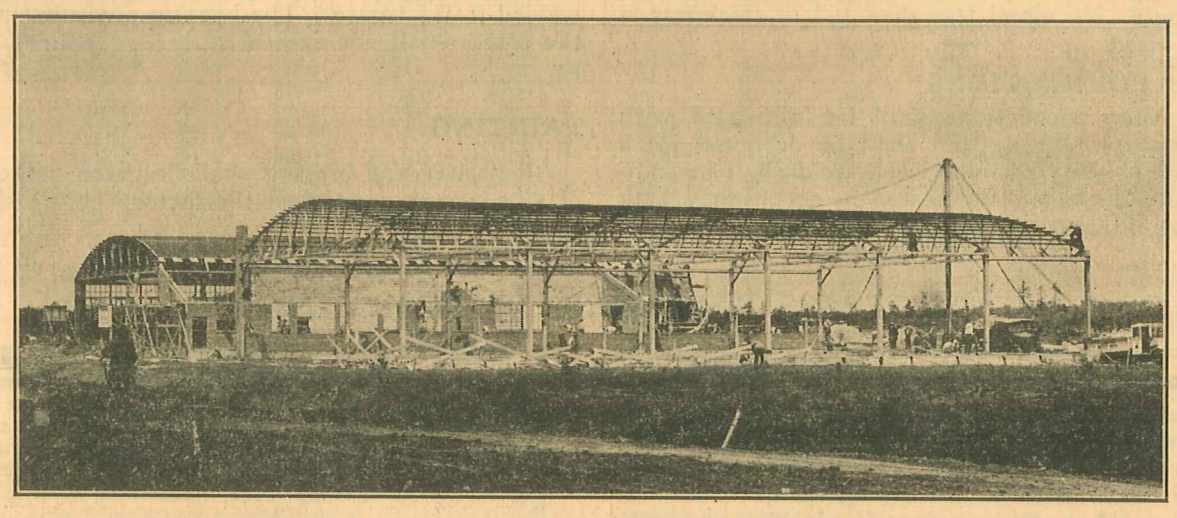
1. Truss symbol and number of trusses.
2. Overall length of truss.
3. Center to center spacing of trusses and (where bracing is to be furnished) type of truss bracing.
4. Punching in top chord for attaching purlin construction, except where Macomber is to furnish the purlins.
5. (Masonry pilasters) Maximum permissible bearing pressure.

5-a. (Steel columns) Details for punching trusses for connecting to columns.

6. Such other punching details as may be required for attaching suspended balconies, hoists, monorail systems, column knee bracing, etc.



Interior View of Store and Bowling Alley, Cincinnati, Ohio.
Macomber Trusses Supporting Concrete Decking on
Macomber Bar Joist Purlins.



Two Airplane Hangars—Albany Airport—80 ft. by 120 ft.
Macomber Trusses Supporting Wood Decking on
Macomber Nailer Type Purlins.

Macomber Standardized Service in Steel for One-Story Buildings is ideal for Hangars, Terminals, Gymnasiums, Auditoriums, Theatres, Warehouses, Factories, Garages and the like. Macomber Catalog No. 618 covers this complete service in steel.

THE MACOMBER STEEL COMPANY, CANTON, OHIO

THE ROGERS-MILLER CO.